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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,812	01/30/2001	Kuniyuki Kajita	L9289.01107PCT	4608

7590 05/09/2005  
Stevens Davis Miller & Mosher  
Suite 850  
1615 L Street NW  
Washington, DC 20036

EXAMINER

PEZZLO, JOHN

ART UNIT PAPER NUMBER

2662

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/744,812	Applicant(s) KAJITA ET AL.	
	Examiner John Pezzlo	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandin et al. (US 5,946,357) hereinafter Sandin.

1. Regarding claims 1 and 6-10 – Sandin discloses a method and device (apparatus) which is part of a CDMA wireless communication system comprising a terminal and a base station, refer to Figure 1 and column 4 lines 38 to 67 and column 5 lines 1 to 3. Sandin discloses an interleaver for implementing a multi-stage block interleaver for use in a CDMA system, refer to Figures 1 and 3 column 7 lines 3 to 30. Sandin discloses that CDMA wireless system would have a restorer (deinterleaver) with the same structure for recovering the original data at both the terminal and the base station, as claimed in claim 10, refer to Figures 1 and 4 and column 7 line 22 to column 8 line 3. Sandin discloses a multi-stage block interleaver comprising an outer block interleaver and an inner block interleaver, refer to Figures 3 and 7 and column 9 line 55 to

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column 10 line 15 and column 11 lines 1 to 25. Sandin discloses rules for performing the block interleaving, refer to Figure 7 and column 8 lines 35 to 65 and column 11 lines 1 to 25.

Sandin does not expressly disclose a conversion series creating means for creating at least one sequence conversion series using at least one element included in a sequence conversion rule expression stipulated for every input data item.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide a conversion series creating means since Sandin discloses the block interleaver and the rules for converting the input data sequence into the interleaved sequence for every input data item. The suggestion/motivation for doing so would have been that Sandin discloses a block interleaver (refer to Figure 7 and column 11 lines 1 to 25) and providing a conversion creating means is natural to providing the algorithm for the implementation of the interleaver.

Sandin does not expressly disclose a sequence changing means for changing the sequence of the input data using the created sequence conversion series.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide a sequence changing means since Sandin discloses the block interleaver and the rules for converting the input data sequence into the interleaved sequence for every input data item. The suggestion/motivation for doing so would have been that Sandin discloses a block interleaver (refer to Figure 7 and column 11 lines 1 to 25) and providing a sequence changing means is natural to providing the algorithm for the implementation of the interleaver.

2. Regarding claim 2 – Sandin discloses wherein the sequence changing means further comprises a first sequence calculating means (outer interleaver) for calculating the sequence of

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the changed sequence of the input data and changes the sequence of the input data according to the calculated sequence, refer to Figure 7 and column 11 lines 1 to 25.

3. Regarding claim 3 – Sandin discloses wherein the sequence changing means further comprises a second sequence calculating means (inner interleaver) for calculating the sequence of the input data to be placed in this input data and changes the sequence of the input data according to the calculated sequence, refer to Figures 3 and 7 and column 11 lines 1 to 25.

4. Regarding claim 4 – Sandin discloses wherein the conversion series creating means creates a sequence conversion series, when one element included in the sequence conversion rule expression is lower than the other element included in the expression by at least 1 stage, using the other element, refer to Figure 7 and column 11 lines 1 to 25. Sandin discloses the taking the encoded data stream and forming a matrix wherein each row is read in and each column is read out, forming a sequence where the data of one frame (stage) is lower than the element of the following stage.

5. Regarding claim 5 – Sandin discloses wherein the sequence changing means changes the sequence of the input data whose sequence has been changed according to the sequence conversion rule expression, refer to Figures 1 and 3 and 7 and column 8 lines 35 to 65 and column 11 lines 1 to 25.

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***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Oshima (US 5,802,241) discloses a communication system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Pezzlo whose telephone number is (571) 272-3090. The examiner can normally be reached on Monday to Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C.

or faxed to:

(703) 872-9306

For informal or draft communications, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

Jefferson Building

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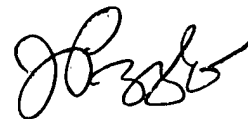
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500 Dulany Street

Alexandria, VA.

John Pezzlo

5 May 2005

A handwritten signature in black ink, appearing to read 'J. Pezzlo', with a stylized flourish at the end.

**JOHN PEZZLO**  
**PRIMARY EXAMINER**